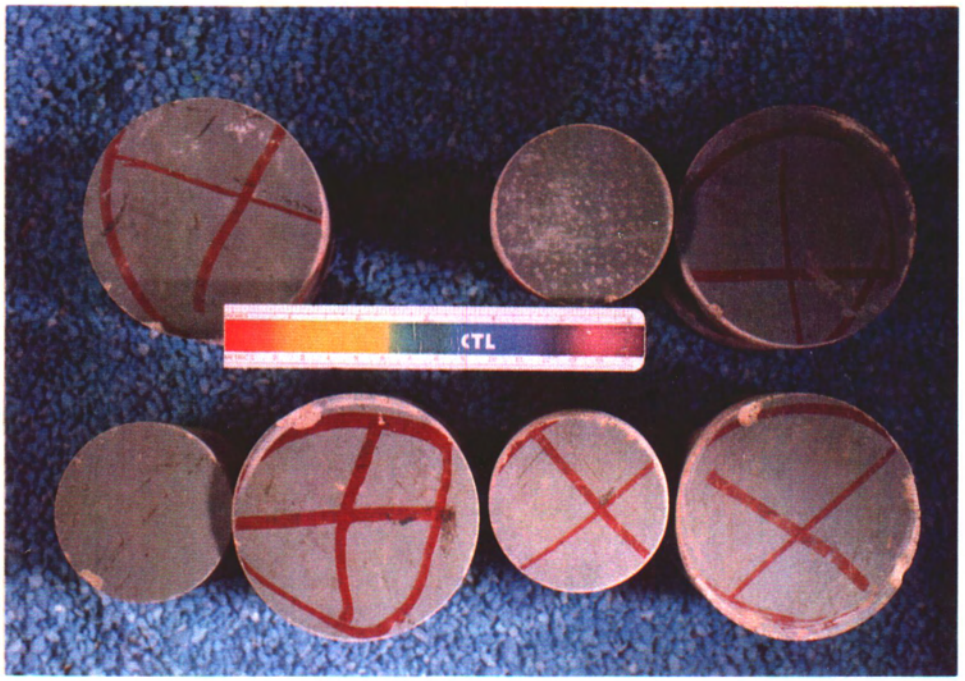

FIG. 1 TOP AND SIDE VIEWS OF THE CONCRETE CORES, AS RECEIVED FOR EXAMINATION AND TESTING.

CTL

PETROGRAPHIC EXAMINATION OF HARDENED CONCRETE, ASTM C 856

CTL PROJECT NO.: 153235
CLIENT: Reavely Engineers & Assoc.
STRUCTURE: Floor Slab
LOCATION: Albuquerque Federal Building
Albuquerque, New Mexico

DATE: November 29, 1993
PROBLEM: Condition Evaluation
EXAMINED BY: R. D. Sturm

SAMPLE:

Identification: 3rd Floor East 2.

Dimensions: Core diameter = 3.7 in.; length = 4.5 in.

Top End: Flat surface covered by gray coating.

Bottom End: Irregular, slanted, fracture surface passing mainly around coarse and fine aggregate particles.

Cracks, Joints, Large Voids: No major cracks, joints, or unusually large voids visible.

Reinforcement: None observed.

AGGREGATES (A)

Coarse (C): Partially crushed natural gravel composed of a variety of mainly siliceous igneous and metasedimentary rocks. Minor calcareous particles, mainly marble, also observed.

Fine (F): Fine to coarse grains composed of quartz, feldspar, and other rocks similar to coarse aggregate.

Gradation & Top Size: Evenly graded to an observed top size of 0.75.

Shape & Distribution: Coarse aggregate is rounded to angular; equant to elongate; fine aggregate is angular to subrounded, equant to elongate; distribution is slightly nonuniform.

PASTE

Color: Buff.

Hardness: Moderately soft.

Luster: Dull to subvitreous.

Calcium Hydroxide*: Estimated 5 to 10%; coarsely crystalline calcium hydroxide observed at paste-aggregate interface.

Unhydrated Portland Cement Clinker Particles (UPC's)*: 1 to 3%, locally up to 5% in upper 0.1 in of core.

Depth of Carbonation: 0.25 to 0.75 in. from top end of core.

Air Content: Estimated 1 to 2%; voids observed in paste are small and spherical, typical of entrained air voids.

Fly Ash*: None observed.

Paste-Aggregate Bond: Moderately weak to weak; surfaces of freshly fractured concrete pass mainly around coarse and fine aggregate particles.

Secondary Deposits: None observed.

Microcracking: A few vertical hairline cracks and microcracks observed in top 2 in. of core; cracks pass mainly around aggregate particles but do not extend through coating material at top end of core. A few random microcracks observed at greater depth in core.

ESTIMATED WATER-CEMENT RATIO: 0.65 or higher.

MISCELLANEOUS: Top surface of core is covered by a multi-layered coating material, most likely paint. At least four distinct layers visible; combined thickness ranges up to 0.17 mm (0.007 in.). Coating material locally penetrates and partially fills upper 0.1 to 0.2 in. of hairline cracks at top end of core.

*percent by volume of paste

CTL

PETROGRAPHIC EXAMINATION OF HARDENED CONCRETE, ASTM C 856

CTL PROJECT NO.: 153235
CLIENT: Reavely Engineers & Assoc.
STRUCTURE: Floor Slab
LOCATION: Albuquerque Federal Building
Albuquerque, New Mexico

DATE: November 29, 1993
PROBLEM: Condition Evaluation
EXAMINED BY: R. D. Sturm

SAMPLE:

Identification: 4th Floor West 2.

Dimensions: Core diameter = 3.7 in.; length = 5.2 in.

Top End: Flat surface covered by gray coating.

Bottom End: Irregular, slanted, fracture surface passing mainly around coarse and fine aggregate particles.

Cracks, Joints, Large Voids: No major cracks, joints, or unusually large voids visible.

Reinforcement: None observed.

AGGREGATES (A)

Coarse (C): Partially crushed natural gravel composed of a variety of mainly siliceous igneous and metasedimentary rocks. Minor calcareous particles, mainly marble, also observed.

Fine (F): Fine to coarse grains composed of quartz, feldspar, and other rocks similar to coarse aggregate.

Gradation & Top Size: Evenly graded to an observed top size of 0.65.

Shape & Distribution: Coarse aggregate is rounded to angular; equant to elongate; fine aggregate is angular to subrounded, equant to elongate; distribution is slightly nonuniform.

PASTE

Color: Buff.

Hardness: Moderately soft.

Luster: Dull to subvitreous.

Calcium Hydroxide*: Estimated 5 to 10%; coarsely crystalline calcium hydroxide observed at paste-aggregate interface.

Unhydrated Portland Cement Clinker Particles (UPC's)*: 1 to 3%.

Depth of Carbonation: 0.2 to 0.3 in. from top end of core.

Air Content: Estimated 1 to 2%; voids observed in paste are small and spherical, typical of entrained air voids.

Fly Ash*: None observed.

Paste-Aggregate Bond: Moderately weak; surfaces of freshly fractured concrete pass mainly around coarse aggregate particles.

Secondary Deposits: None observed.

Microcracking: A few vertical hairline cracks and microcracks observed in top 1 in. of core; cracks pass mainly around aggregate particles but do not extend through coating material at top end of core. A few random microcracks observed at greater depth in core.

ESTIMATED WATER-CEMENT RATIO: 0.65 or higher.

MISCELLANEOUS: Top surface of core is covered by a multi-layered coating material, most likely paint. At least five distinct layers visible; combined thickness ranges up to 0.3 mm (0.012 in.).

*percent by volume of paste

CTL

PETROGRAPHIC EXAMINATION OF HARDENED CONCRETE, ASTM C 856

CTL PROJECT NO.: 153235
CLIENT: Reavely Engineers & Assoc.
STRUCTURE: Floor Slab
LOCATION: Albuquerque Federal Building
Albuquerque, New Mexico

DATE: November 29, 1993
PROBLEM: Condition Evaluation
EXAMINED BY: R. D. Sturm

SAMPLE:

Identification: 7th Floor West 2.

Dimensions: Core diameter = 3.7 in.; length = 5.4 in.

Top End: Flat surface covered by gray coating.

Bottom End: Irregular, slightly slanted, fracture surface passing mainly around coarse and fine aggregate particles.

Cracks, Joints, Large Voids: A few large entrapped air voids, diameter of 0.2 to 0.25 in., are randomly dispersed in core. No major cracks or joints visible.

AGGREGATES (A)

Coarse (C): Partially crushed natural gravel composed of a variety of mainly siliceous igneous and metasedimentary rocks. Minor calcareous particles, mainly marble, also observed.

Fine (F): Fine to coarse grains composed of quartz, feldspar, and other rocks similar to coarse aggregate.

Gradation & Top Size: Evenly graded to an observed top size of 0.9 in.

Shape & Distribution: Coarse aggregate is rounded to angular; equant to elongate; fine aggregate is angular to subrounded, equant to elongate; distribution is uniform.

PASTE

Color: Buff.

Hardness: Moderately soft.

Luster: Dull to subvitreous.

Calcium Hydroxide*: Estimated 5 to 10%; coarsely crystalline calcium hydroxide observed at paste-aggregate interface.

Unhydrated Portland Cement Clinker Particles (UPC's)*: 1 to 3%.

Depth of Carbonation: 0.01 to 0.1 in. from top end of core.

Air Content: Estimated 1 to 2%; voids observed in paste are small and spherical, typical of entrained air voids.

Fly Ash*: None observed.

Paste-Aggregate Bond: Moderately weak to weak; surfaces of freshly fractured concrete pass mainly around coarse and fine aggregate particles.

Secondary Deposits: None observed.

Microcracking: A few vertical hairline cracks and microcracks observed in top 1 in. of core; cracks pass mainly around aggregate particles but do not extend through coating material at top end of core. A few random microcracks observed at greater depth in core.

ESTIMATED WATER-CEMENT RATIO: 0.65 or higher.

MISCELLANEOUS: Top surface of core is covered by a multi-layered coating material, most likely paint. At least four distinct layers visible; combined thickness ranges up to 0.25 mm (0.01 in.).

*percent by volume of paste

CTL

PETROGRAPHIC EXAMINATION OF HARDENED CONCRETE, ASTM C 856

CTL PROJECT NO.: 153235
CLIENT: Reavely Engineers & Assoc.
STRUCTURE: Floor Slab
LOCATION: Albuquerque Federal Building
Albuquerque, New Mexico

DATE: November 29, 1993
PROBLEM: Condition Evaluation
EXAMINED BY: R. D. Sturm

SAMPLE:

Identification: 8th Floor East 2.

Dimensions: Core diameter = 3.7 in.; length = 5.75 in.

Top End: Flat surface covered by gray coating.

Bottom End: Irregular, fracture surface passing mainly around coarse and fine aggregate particles.

Cracks, Joints, Large Voids: Hairline crack extends longitudinally from top end to approximately 2 in. from top end of core. Crack not visible form coated top end of core.

AGGREGATES (A)

Coarse (C): Partially crushed natural gravel composed of a variety of mainly siliceous igneous and metasedimentary rocks. Minor calcareous particles, mainly marble, also observed.

Fine (F): Fine to coarse grains composed of quartz, feldspar, and other rocks similar to coarse aggregate.

Gradation & Top Size: Evenly graded to an observed top size of 0.75.

Shape & Distribution: Coarse aggregate is rounded to angular; equant to elongate; fine aggregate is angular to subrounded, equant to elongate; distribution is slightly nonuniform.

PASTE

Color: Buff.

Hardness: Moderately soft.

Luster: Dull to subvitreous.

Calcium Hydroxide*: Estimated 5 to 10%; coarsely crystalline calcium hydroxide observed at paste-aggregate interface.

Unhydrated Portland Cement Clinker Particles (UPC's)*: 1 to 3%.

Depth of Carbonation: 0.5 to 0.7 in. from top end of core.

Air Content: Estimated 1 to 2%; voids observed in paste are small and spherical, typical of entrained air voids.

Fly Ash*: None observed.

Paste-Aggregate Bond: Moderately weak to weak; surfaces of freshly fractured concrete pass mainly around coarse and fine aggregate particles.

Secondary Deposits: None observed.

Microcracking: A few vertical hairline cracks and microcracks observed in top 2 in. of core; cracks pass mainly around aggregate particles but do not extend through coating material at top end of core. A few random microcracks observed at greater depth in core.

ESTIMATED WATER-CEMENT RATIO: 0.65 or higher.

MISCELLANEOUS: Top surface of core is covered by a multi-layered coating material, most likely paint. At least four distinct layers visible; combined thickness ranges up to 0.20 mm (0.008 in.). Coating material locally penetrated and partially fills upper 0.1 to 0.2 in. of hairline cracks at top end of core.

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*percent by volume of paste

CONSTRUCTION TECHNOLOGY LABORATORIES, INC.

COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE CORES - ASTM C42

Project No: 153235

Core Identification	8th Fl East	7th Fl West	4th Fl W-1
Maximum Aggregate Size (in.)	0.75	0.75	0.75
Age at Test (days)	unknown	unknown	unknown
Moisture Condition	dry	dry	dry
Diameter 1 (in.)	2.575	2.585	2.585
Diameter 2 (in.)	2.575	2.585	2.590
Average Diameter (in.)	2.575	2.585	2.588
Cross-Sectional Area (sq in.)	5.208	5.248	5.258
Length Surface Ground (in.)	4.06	4.24	5.06
Weight in Air (lb)	1.73	1.79	2.15
Weight in Water (lb)	0.98	1.00	1.22
Density (lb/ cu ft)	143.9	141.4	144.3
Loading Rate (psi/sec)	35	35	35
Maximum Load (lb)	8,500	11,700	8,600
Uncorrected Comp Stg (psi)	1,630	2,230	1,640
Length-to-Diamenter Ratio (L/D)	1.57	1.64	1.96
Correction Factor	0.966	0.971	1.000
Corrected Comp Stg (psi)	**1,570**	**2,170**	**1,640**
Fracture Pattern	cone	cone	cone
Notes			

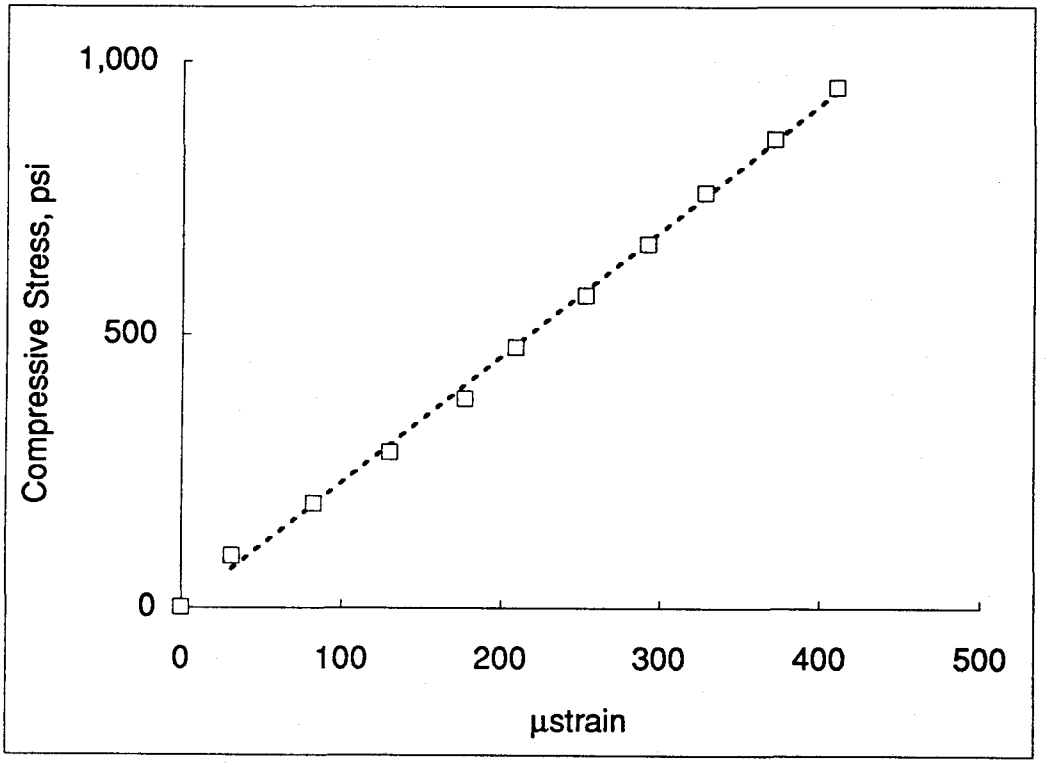
Tested by: J. DiJohn — Checked by: R. G. Burg

Date Tested: 11 Nov 1993 — Testing Machine No.: 60K

		Maximum Load, lb	11,700	
Diameter 1, in.	2.585	**Compressive Strength, psi**	**2,170**	
Diameter 2, in.	2.585	**40% Comp Stength, psi**	**868**	
Cross-sectional area	5.25	**Measured Ec Linear Reg.**	**2,300,000**	(R2 = 0.998)
Load increment, lbs	500	**ASTM Ec @ 40%fc**	**2,310,000**	
Rig Factor*	0.633	**ASTM Ec @ 450 μstrain**	**Not loaded to 450 μstrain**	
No. of Readings	11	Identification:	7th Floor West	

Reading No.	Stress	Gage Readings Run 2	Run 3	μstrain	Stress, psi	3 Point Tangent Ec
1	0	5	0	0	0	--
2	95	25	20	32	95	2,250,000
3	191	55	55	83	191	1,930,000
4	286	85	85	130	286	2,010,000
5	381	115	115	178	381	2,380,000
6	476	135	135	209	476	2,520,000
7	572	160	165	253	572	2,300,000
8	667	185	190	292	667	2,540,000
9	762	210	210	328	762	2,400,000
10	857	235	240	371	857	2,300,000
11	953	265	260	411	953	

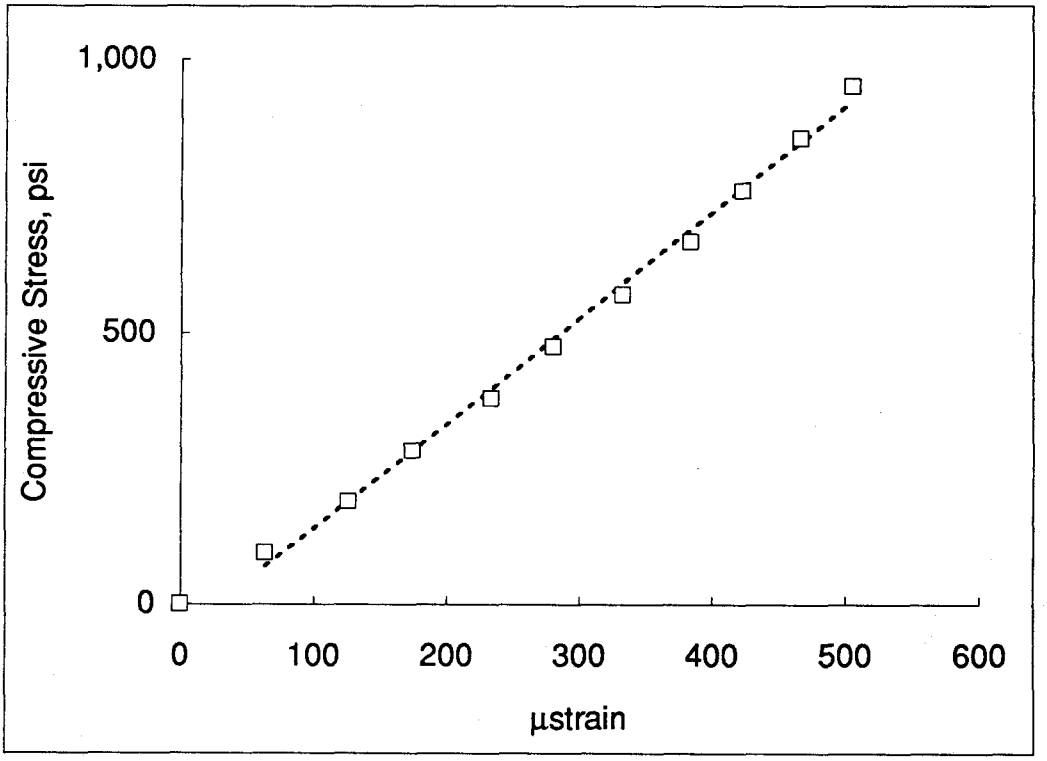
*Rig Factor = (Gage Length x Multiplaction Factor) ÷10



		Maximum Load, lb	8,600	
Diameter 1, in.	2.585	**Compressive Strength, psi**	**1,640**	
Diameter 2, in.	2.590	**40% Comp Stength, psi**	**656**	
Cross-sectional area	5.26	**Measured Ec Linear Reg.**	**1,930,000**	(R2 = 0.996)
Load increment, lbs	500	**ASTM Ec @ 40%fc**	**1,770,000**	
Rig Factor*	0.633	**ASTM Ec @ 450 μstrain**	**1,860,000**	
No. of Readings	11	Identification:	4th Fl W1	

Reading		Gage Readings			Stress,	3 Point
No.	Stress	Run 2	Run 3	μstrain	psi	Tangent Ec
1	0	0	0	0	0	--
2	95	35	45	63	95	1,500,000
3	190	80	80	126	190	1,710,000
4	285	115	105	174	285	1,780,000
5	380	145	150	233	380	1,780,000
6	475	175	180	280	475	1,930,000
7	571	210	210	332	571	1,850,000
8	666	240	245	383	666	2,080,000
9	761	270	265	423	761	2,290,000
10	856	295	295	466	856	2,290,000
11	951	320	320	506	951	

*Rig Factor = (Gage Length x Multiplaction Factor) ÷10



APPENDIX A-3

COST ESTIMATES

APPENDIX A-3

COST ESTIMATES

REINFORCE FLOORS BY ADDING NEW CONCRETE COLUMN CAPITALS

ESTIMATE NO. 1 - CONCRETE OPTION TO INCREASE FLOOR LIVE LOAD CAPACITY TO ORIGINAL DESIGN LIVE LOAD

STRENGTH EVALUATION AND STRUCTURAL ANALYSIS INVESTIGATION FOR THE UNITED STATES FEDERAL BUILDING 517 GOLD AVE. SW, ALBUQUERQUE, NEW MEXICO

PROJECT NUMBER ZTX00210 BUILDING NUMBER NM0024ZZ

FINAL SUBMITTAL MARCH 30, 1994

DIV.	ITEM DESCRIPTION	AMOUNT		MATERIAL	LABOR	COST	TOTAL
1.00	**GENERAL REQUIREMENTS**						
	OFFICE TRAILER	6	MO			$206.00	$1,236.00
	TEMP. UTILITIES	6	MO			$750.00	$4,500.00
	PROJ. MANAGER	16	WK			$2,025.00	$32,400.00
	SUPERINTENDENT	24	WK			$1,725.00	$41,400.00
	TESTING	1	LS			$20,000.00	$20,000.00
	BARRIERS	1	LS			$15,000.00	$15,000.00
	PERMIT/BOND/INSURANCE	1	LS			$40,000.00	$40,000.00
	CLEANUP	1	LS			$20,000.00	$20,000.00
	Subtotal						$174,536.00
	CONTINGENCY	15%				$656,206.00	$98,430.90
	OVERHEAD	10%				$754,636.90	$75,463.69
	PROFIT	10%				$830,100.59	$83,010.06
	NEW MEXICO GROSS RECEIPTS TAX	5.75%				$913,110.65	$52,503.86
	Total General Conditions						$483,944.51
2.00	**SITEWORK**						
	REMOVE EXISTING CEILINGS	10900	SF	$0.10	$0.90	$1.00	$10,900.00
	REMOVE EXISTING PARTITIONS	16000	SF	$0.25	$1.25	$1.50	$24,000.00
	PROTECTION OF EXISTING FINISHES	1	EA	$30,000.00	$120,000.00	$150,000.00	$150,000.00
	Total Site Work						$184,900.00
3.00	**CONCRETE**						
	ROUGHEN EXIST'G CONC. COLUMNS	1530	SF	$1.00	$9.00	$10.00	$15,300.00
	DRILL & DOWEL INTO EXIST'G COL'S	872	EA	$7.00	$18.00	$25.00	$21,800.00
	FORM COLUMN CAPITALS	4800	SF	$5.00	$5.00	$10.00	$48,000.00
	COLUMN CAPITAL REINFORCEMENT	27000	LB	$0.25	$0.50	$0.75	$20,250.00
	PLACE CONC. IN COL. CAPITALS	109	YD	$70.00	$130.00	$200.00	$21,800.00
	EPOXY INJECTION	1300	SF	$5.00	$10.00	$15.00	$19,500.00
	Total Concrete						$146,650.00

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
4.00 MASONRY						
	NOT REQUIRED					
	Total Masonry					$0.00
5.00 METALS						
	NOT REQUIRED					
	Total Metals					$0.00
6.00 WOOD AND PLASTICS						
	NOT REQUIRED					
	Total Wood and Plastics					$0.00
7.00 THERMAL AND MOISTURE PROTECTION						
	NOT REQUIRED					
	Total Thermal and Moisture Protection					$0.00
8.00 DOORS AND WINDOWS						
	NOT REQUIRED					
	Total Doors and Windows					$0.00
9.00 FINISHES						
	INSTALL CEILINGS	10900 SF	$0.90	$0.90	$1.80	$19,620.00
	INSTALL PARTITIONS	16000 SF	$1.75	$3.00	$4.75	$76,000.00
	Total Finishes					$95,620.00
10.00 SPECIALTIES						
	NOT REQUIRED					
	Total Specialties					$0.00
11.00 EQUIPMENT						
	NOT REQUIRED					
	Total Equipment					$0.00

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
12.00	**FURNISHINGS**					
	NOT REQUIRED					
	Total Furnishings					$0.00
13.00	**SPECIAL CONSTRUCTION**					
	NOT REQUIRED					
	Total Special Construction					$0.00
14.00	**CONVEYING SYSTEMS**					
	NOT REQUIRED					
	Total Conveying systems					$0.00
15.00	**MECHANICAL**					
	REMOVE AND REPLACE EXISTING	10900 SF	$0.60	$2.40	$3.00	$32,700.00
	Total Mechanical					$32,700.00
16.00	**ELECTRICAL**					
	REMOVE AND REPLACE EXISTING	10900 SF	$0.40	$1.60	$2.00	$21,800.00
	Total Electrical					$21,800.00
TOTAL PROBABLE COST FOR "ESTIMATE NO. 1"						$965,614.51
	SQUARE FOOT COST ANALYSIS:	244800 SF		$3.94	PER SQ. FT.	

STRUCTURAL ENGINEER: **REAVELEY ENGINEERS & ASSOCIATES INC.**
ADDRESS: **1515 South 1100 East**
SALT LAKE CITY, UTAH 84105
BY: **Jeff Miller, Project Manager**
SIGNED: **DATE: MARCH 30, 1994**

APPENDIX A-3

COST ESTIMATES

REINFORCE FLOORS WITH NEW STEEL COLLARS

ESTIMATE NO. 2 - STEEL OPTION TO INCREASE FLOOR LIVE LOAD CAPACITY TO ORIGINAL DESIGN LIVE LOAD

STRENGTH EVALUATION AND STRUCTURAL ANALYSIS INVESTIGATION FOR THE UNITED STATES FEDERAL BUILDING 517 GOLD AVE. SW, ALBUQUERQUE, NEW MEXICO

PROJECT NUMBER ZTX00210 BUILDING NUMBER NM0024ZZ

FINAL SUBMITTAL MARCH 30, 1994

DIV.	ITEM DESCRIPTION	AMOUNT		MATERIAL	LABOR	COST	TOTAL
1.00	**GENERAL REQUIREMENTS**						
	OFFICE TRAILER	6	MO			$206.00	$1,236.00
	TEMP. UTILITIES	6	MO			$750.00	$4,500.00
	PROJ. MANAGER	16	WK			$2,025.00	$32,400.00
	SUPERINTENDENT	24	WK			$1,725.00	$41,400.00
	TESTING	1	LS			$20,000.00	$20,000.00
	BARRIERS	1	LS			$15,000.00	$15,000.00
	PERMIT/BOND/INSURANCE	1	LS			$40,000.00	$40,000.00
	CLEANUP	1	LS			$20,000.00	$20,000.00
	Subtotal						$174,536.00
	CONTINGENCY	15%				$712,286.00	$106,842.90
	OVERHEAD	10%				$819,128.90	$81,912.89
	PROFIT	10%				$901,041.79	$90,104.18
	NEW MEXICO GROSS RECEIPTS TAX	5.75%				$991,145.97	$56,990.89
	Total General Conditions						$510,386.86
2.00	**SITEWORK**						
	REMOVE EXISTING CEILINGS	10900	SF	$0.10	$0.90	$1.00	$10,900.00
	REMOVE EXISTING PARTITIONS	16000	SF	$0.25	$1.25	$1.50	$24,000.00
	PROTECTION OF EXISTING FINISHES	1	EA	$12,000.00	$48,000.00	$60,000.00	$60,000.00
	Total Site Work						$94,900.00
3.00	**CONCRETE**						
	NOT REQUIRED						
	Total Concrete						$0.00
4.00	**MASONRY**						
	NOT REQUIRED						
	Total Masonry						$0.00

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
5.00	**METALS**					
	COLLAR CHANNELS	11 TN			$3,000.00	$34,200.00
	VERTICAL CHANNELS	39 TN			$2,000.00	$78,000.00
	STIFFENER PLATES	1744 EA			$20.00	$34,880.00
	3/4" PLATE	5 TN			$3,000.00	$13,800.00
	BASE PLATES	14 TN			$4,000.00	$56,000.00
	THREADED STUDS	1750 EA			$6.00	$10,500.00
	GROUT	440 EA			$25.00	$11,000.00
	EXPANSION ANCHORS	3270 EA			$10.00	$32,700.00
	LIFTING LABOR	650 HR			$25.00	$16,250.00
	EPOXY INJECTION	270 SF			$20.00	$5,400.00
	Total Metals					$292,730.00
6.00	**WOOD AND PLASTICS**					
	NOT REQUIRED					
	Total Wood and Plastics					$0.00
7.00	**THERMAL AND MOISTURE PROTECTION**					
	NOT REQUIRED					
	Total Thermal and Moisture Protection					$0.00
8.00	**DOORS AND WINDOWS**					
	NOT REQUIRED					
	Total Doors and Windows					$0.00
9.00	**FINISHES**					
	INSTALL CEILINGS	10900 SF	$0.90	$0.90	$1.80	$19,620.00
	INSTALL PARTITIONS	16000 SF	$1.75	$3.00	$4.75	$76,000.00
	Total Finishes					$95,620.00
10.00	**SPECIALTIES**					
	NOT REQUIRED					
	Total Specialties					$0.00

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
11.00 EQUIPMENT						
	NOT REQUIRED					
	Total Equipment					$0.00
12.00 FURNISHINGS						
	NOT REQUIRED					
	Total Furnishings					$0.00
13.00 SPECIAL CONSTRUCTION						
	NOT REQUIRED					
	Total Special Construction					$0.00
14.00 CONVEYING SYSTEMS						
	NOT REQUIRED					
	Total Conveying systems					$0.00
15.00 MECHANICAL						
	REMOVE AND REPLACE EXISTING	10900 SF	$0.60	$2.40	$3.00	$32,700.00
	Total Mechanical					$32,700.00
16.00 ELECTRICAL						
	REMOVE AND REPLACE EXISTING	10900 SF	$0.40	$1.60	$2.00	$21,800.00
	Total Electrical					$21,800.00
TOTAL PROBABLE COST FOR "ESTIMATE NO. 2"						$1,048,136.86
	SQUARE FOOT COST ANALYSIS:	244800 SF		$4.28 PER SQ. FT.		

STRUCTURAL ENGINEER: **REAVELEY ENGINEERS & ASSOCIATES INC.**
ADDRESS: **1515 South 1100 East**
SALT LAKE CITY, UTAH 84105
BY: **Jeff Miller, Project Manager**
SIGNED: **DATE: MARCH 30, 1994**

APPENDIX A-3

COST ESTIMATES

ADD NEW TOPPING TO REDUCE FLOOR DEFLECTIONS AND ADD NEW CONCRETE COLUMN CAPITALS

ESTIMATE NO. 3 - CONCRETE OPTION TO INCREASE FLOOR LIVE LOAD CAPACITY TO ORIGINAL DESIGN LIVE LOAD AND PLACE TOPPING ON EXISTING FLOORS TO REDUCE DEFLECTIONS

STRENGTH EVALUATION AND STRUCTURAL ANALYSIS
INVESTIGATION FOR THE UNITED STATES FEDERAL BUILDING
517 GOLD AVE. SW, ALBUQUERQUE, NEW MEXICO
PROJECT NUMBER ZTX00210 BUILDING NUMBER NM0024ZZ

FINAL SUBMITTAL MARCH 30, 1994

DIV. ITEM DESCRIPTION	AMOUNT		MATERIAL	LABOR	COST	TOTAL
1.00 GENERAL REQUIREMENTS						
OFFICE TRAILER	18	MO			$206.00	$3,708.00
TEMP. UTILITIES	18	MO			$750.00	$13,500.00
PROJ. MANAGER	36	WK			$2,025.00	$72,900.00
SUPERINTENDENT	72	WK			$1,725.00	$124,200.00
TESTING	1	LS			$30,000.00	$30,000.00
BARRIERS	1	LS			$40,000.00	$40,000.00
PERMIT/BOND/INSURANCE	1	LS			$185,000.00	$185,000.00
CLEANUP	1	LS			$40,000.00	$40,000.00
Subtotal						$509,308.00
CONTINGENCY	15%				$6,108,458.00	$916,268.70
OVERHEAD	10%				$7,024,726.70	$702,472.67
PROFIT	10%				$7,727,199.37	$772,719.94
NEW MEXICO GROSS RECEIPTS TAX	5.75%				$8,499,919.31	$488,745.36
Total General Conditions						$3,389,514.67
2.00 SITEWORK						
REMOVE EXISTING CARPET AND VINYL ASBESTOS TILE	220000	SF	$0.00	$3.00	$3.00	$660,000.00
REMOVE EXISTING CEILINGS	220000	SF	$0.10	$0.90	$1.00	$220,000.00
REMOVE EXISTING PARTITIONS	230000	SF	$0.25	$1.25	$1.50	$345,000.00
Total Site Work						$1,225,000.00
3.00 CONCRETE						
ROUGHEN EXIST'G CONC. COLUMNS	1530	SF	$1.00	$9.00	$10.00	$15,300.00
DRILL & DOWEL INTO EXIST'G COL'S	872	EA	$7.00	$18.00	$25.00	$21,800.00
FORM COLUMN CAPITALS	4800	SF	$5.00	$5.00	$10.00	$48,000.00
COLUMN CAPITAL REINFORCEMENT	27000	LB	$0.25	$0.50	$0.75	$20,250.00
PLACE CONC. IN COL. CAPITALS	109	YD	$70.00	$130.00	$200.00	$21,800.00
EPOXY INJECTION	1300	SF	$5.00	$10.00	$15.00	$19,500.00
PREPARE EXISTING CONC. SLAB	220000	SF	$0.10	$0.40	$0.50	$110,000.00

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
3.00	**CONCRETE CONTINUED**					
	INSTALL BONDING COMPOUND	220000 EA	$0.50	$0.75	$1.25	$275,000.00
	PLACE NEW TOPPING ON SLAB	220000 SF	$1.00	$3.00	$4.00	$880,000.00
	Total Concrete					$1,411,650.00
4.00	**MASONRY**					
	NOT REQUIRED					
	Total Masonry					$0.00
5.00	**METALS**					
	NOT REQUIRED					
	Total Metals					$0.00
6.00	**WOOD AND PLASTICS**					
	NOT REQUIRED					
	Total Wood and Plastics					$0.00
7.00	**THERMAL AND MOISTURE PROTECTION**					
	NOT REQUIRED					
	Total Thermal and Moisture Protection					$0.00
8.00	**DOORS AND WINDOWS**					
	NOT REQUIRED					
	Total Doors and Windows					$0.00
9.00	**FINISHES**					
*	INSTALL NEW CARPET TILES	220000 SF	$2.50	$0.40	$2.90	$638,000.00
	INSTALL CEILINGS	220000 SF	$0.90	$0.90	$1.80	$396,000.00
	INSTALL PARTITIONS	230000 SF	$1.75	$3.00	$4.75	$1,092,500.00
	Total Finishes					$2,126,500.00
10.00	**SPECIALTIES**					
	NOT REQUIRED					
	Total Specialties					$0.00

* This assumes that the existing carpet will not be reinstalled.

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
11.00 EQUIPMENT						
	NOT REQUIRED					
	Total Equipment					$0.00
12.00 FURNISHINGS						
	NOT REQUIRED					
	Total Furnishings					$0.00
13.00 SPECIAL CONSTRUCTION						
	NOT REQUIRED					
	Total Special Construction					$0.00
14.00 CONVEYING SYSTEMS						
	NOT REQUIRED					
	Total Conveying systems					$0.00
15.00 MECHANICAL						
	RELOCATION OF EXISTING DUCTS	220000 SF	$0.40	$1.40	$1.80	$396,000.00
	Total Mechanical					$396,000.00
16.00 ELECTRICAL						
	RELOCATION OF EXIST'G OUTLETS	220000 SF	$0.40	$1.60	$2.00	$440,000.00
	Total Electrical					$440,000.00
TOTAL PROBABLE COST FOR "ESTIMATE NO. 3"						$8,988,664.67
	SQUARE FOOT COST ANALYSIS:	244800 SF		$36.72 PER SQ. FT.		

STRUCTURAL ENGINEER: **REAVELEY ENGINEERS & ASSOCIATES INC.**
ADDRESS: **1515 South 1100 East**
SALT LAKE CITY, UTAH 84105
BY: **Jeff Miller, Project Manager**
SIGNED: **DATE: MARCH 30, 1994**

APPENDIX A-3

COST ESTIMATES

SEISMIC UPGRADE

ESTIMATE NO. 4 - SEISMIC STRENGTHENING (SHEAR WALLS)

STRENGTH EVALUATION AND STRUCTURAL ANALYSIS INVESTIGATION FOR THE UNITED STATES FEDERAL BUILDING 517 GOLD AVE. SW, ALBUQUERQUE, NEW MEXICO PROJECT NUMBER ZTX00210 BUILDING NUMBER NM0024ZZ

FINAL SUBMITTAL MARCH 30, 1994

DIV.	ITEM DESCRIPTION	AMOUNT		MATERIAL LABOR COST	TOTAL
1.00	**GENERAL REQUIREMENTS**				
	OFFICE TRAILER	16	MO	$206.00	$3,296.00
	TEMP. UTILITIES	16	MO	$750.00	$12,000.00
	PROJ. MANAGER	32	WK	$2,025.00	$64,800.00
	SUPERINTENDENT	64	WK	$1,725.00	$110,400.00
	SCAFFOLDING	16	MO	$10,200.00	$163,200.00
	TESTING	1	LS	$50,000.00	$50,000.00
	BARRIERS	1	LS	$30,000.00	$30,000.00
	CRANE	16	MO	$10,000.00	$160,000.00
	PERMIT/BOND/INSURANCE	1	LS	$84,000.00	$84,000.00
	CLEANUP	1	LS	$20,000.00	$20,000.00
	Subtotal				$697,696.00
	OVERHEAD	10%		$2,260,324.80	$226,032.48
	PROFIT	10%		$2,486,357.28	$248,635.73
	NEW MEXICO GROSS RECEIPTS TAX	5.75%		$2,734,993.01	$157,262.10
	Total General Requirements				$1,329,626.31
2.00	**SITEWORK**				
	DEMO SIDEWALK	140	SY	$6.25	$875.00
	DEMO CURB & GUTTER	200	LF	$4.28	$856.00
	DEMO PAVEMENT	230	SY	$5.90	$1,357.00
	CLEAN & ROUGHEN WALL	2214	SF	$5.20	$11,512.80
	HAUL	430	CY	$13.40	$5,762.00
	REMOVE BRICK WALL	10680	SF	$2.50	$26,700.00
	REMOVE STRUCTURAL CLAY TILE	6720	SF	$2.90	$19,488.00
	REMOVE PLASTER FINISH	8520	SF	$0.70	$5,964.00
	REMOVE METAL PANELS	1792	SF	$0.60	$1,075.20
	REMOVE WINDOW FRAMES	112	EA	$23.00	$2,576.00
	REMOVE STUCCO	4200	SF	$0.50	$2,100.00
	REMOVE GRANITE PANEL	610	SF	$4.00	$2,440.00
	REMOVE RIBBON WINDOW 1ST FLR	4	EA	$16.00	$64.00
	EXCAVATION	2370	CY	$7.38	$17,490.60

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL LABOR	COST	TOTAL
2.00	**SITEWORK CONTINUED**				
	SHORING	9280 SF		$7.95	$73,776.00
	STRUCT. FILL	356 CY		$13.55	$4,823.80
	COMPACTION	356 CY		$4.83	$1,719.48
	BACKFILL	1718 CY		$2.15	$3,693.70
	COMPACTION	1718 CY		$3.25	$5,583.50
	SIDEWALK	1260 SF		$3.85	$4,851.00
	CURB & GUTTER	200 LF		$9.70	$1,940.00
	PAVEMENT	2070 SY		$23.90	$49,473.00
	Total Site Work				$244,121.08
3.00	**CONCRETE**				
	DRILL & DOWEL TO EXIST'G BLDG	2000 EA		$25.00	$50,000.00
	BONDING AGENT	70 G		$50.00	$3,500.00
	FOUNDATIONS	500 CY		$350.00	$175,000.00
	FOUNDATIONS FRAMING	2000 SF		$8.00	$16,000.00
	SHEAR WALL CONCRETE	1020 CY		$120.00	$122,400.00
	SHEAR WALL REINF.	150 T		$1,000.00	$150,000.00
	SHEAR WALL FORM	19800 SF		$12.00	$237,600.00
	FORM LINER	19800 SF		$4.00	$79,200.00
	ROUGHEN EXIST'G CONCRETE	5000 SF		$5.00	$25,000.00
	Total Concrete				$858,700.00
4.00	**MASONRY**				
	NOT REQUIRED				
	Total Masonry				$0.00
5.00	**METALS**				
	ANCHOR EXIST'G MASONRY WALLS	4800 LF		$50.00	$240,000.00
	Total Metals				$240,000.00
6.00	**WOOD AND PLASTICS**				
	NOT REQUIRED				
	Total Wood and Plastics				$0.00
7.00	**THERMAL AND MOISTURE PROTECTION**				
	BATT INSUL - 3"	13204 SF		$0.45	$5,941.80
	SEALANT	1 LS		$9,000.00	$9,000.00
	Total Thermal and Moisture Protection				$14,941.80

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL LABOR COST	TOTAL
8.00	**DOORS AND WINDOWS**			
	ALUM. WINDOW FRAME - 4'X4'	2042 SF	$11.00	$22,462.00
	INSULATED/TINTED GLAZING	2292 SF	$14.20	$32,546.40
	Total Doors and Windows			$55,008.40
9.00	**FINISHES**			
	GYP-BD 5/8" TYPE X	13204 SF	$0.87	$11,487.48
	METAL STUDS	13204 SF	$0.73	$9,638.92
	EXTERIOR SHEATHING	13204 SF	$0.90	$11,883.60
	PAINTING - INTERIOR WALLS	13204 SF	$0.20	$2,640.80
	VCT 12X12	800 SF	$3.40	$2,720.00
	VINYL BASE	800 LF	$1.40	$1,120.00
	EXTEND LAY-IN CEILING	800 SF	$2.50	$2,000.00
	SEAL EXTERIOR WALL	16400 SF	$3.00	$49,200.00
	Total Finishes			$90,690.80
10.00	**SPECIALTIES**			
	NOT REQUIRED			
	Total Specialties			$0.00
11.00	**EQUIPMENT**			
	NOT REQUIRED			
	Total Equipment			$0.00
12.00	**FURNISHINGS**			
	BLINDS	1792 SF	$2.66	$4,766.72
	Total Furnishings			$4,766.72
13.00	**SPECIAL CONSTRUCTION**			
	NOT REQUIRED			
	Total Special Construction			$0.00
14.00	**CONVEYING SYSTEMS**			
	NOT REQUIRED			
	Total Conveying systems			$0.00

DIV.	ITEM DESCRIPTION	AMOUNT	MATERIAL	LABOR	COST	TOTAL
15.00 MECHANICAL						
	REMOVE AND REPLACE EXISTING	1600 LF			$30.00	$48,000.00
	Total Mechanical					$48,000.00
16.00 ELECTRICAL						
	REMOVE AND REPLACE EXISTING	1600 LF			$4.00	$6,400.00
	Total Electrical					$6,400.00
TOTAL PROBABLE COST FOR "ESTIMATE NO. 4"						$2,892,255.11

SQUARE FOOT COST ANALYSIS: 244800 SF $11.81 PER SQ. FT.

STRUCTURAL ENGINEER: **REAVELEY ENGINEERS & ASSOCIATES INC.**
ADDRESS: **1515 South 1100 East**
SALT LAKE CITY, UTAH 84105
BY: **Jeff Miller, Project Manager**
SIGNED: **DATE: MARCH 30, 1994**